

What is claimed is:

1. A bicycle with two pedaling modes, comprising:
 - a bicycle body having two handlebars respectively disposed on right and left sides thereof, two wheels respectively disposed on front and rear sides thereof and a seat disposed between the two wheels;
 - a rotating shaft tube disposed below the bicycle body for driving the two wheels and the rotating shaft tube having a rotating shaft structure and a mode change apparatus, wherein the rotating shaft structure includes:
 - a shaft unit having a shaft portion, a first tail portion and a second tail portion respectively extending from two ends of the shaft portion, a wedge-shaped portion formed on an outer circumference of the first tail portion and a washer disposed at a free end of the first tail portion;
 - a first spring enclosing the shaft portion of the shaft unit, the first spring having a first circular portion and a second circular portion respectively formed on two sides thereof;
 - a first sleeve having a hollow sleeve body and a mating wedge-shaped portion formed on an inner circumference of the hollow sleeve body, the mating wedge-shaped portion mating with the corresponding wedge-shaped portion; and
 - a second spring enclosing the first tail portion and abutting against between an end of the mating wedge-shaped portion and the washer;
- and wherein the mode change apparatus includes a bar inserted in the rotating

shaft tube for alternatively inserting into the first circular portion of the first spring and a controller for controlling the bar;

two cranks respectively connecting to the first sleeve and the second tail portion; and

5 two pedals respectively connecting to the two cranks.

2. The bicycle with two pedaling modes as claimed in claim 1, wherein the wedge-shaped portion and the mating wedge-shaped portion each have concave sections and convex sections alternately to mate with each other.

3. The bicycle with two pedaling modes as claimed in claim 1, wherein
10 the rotating shaft structure further includes a second sleeve enclosing the shaft portion of the shaft unit, and the second sleeve has a concavity corresponding to the bar, the concavity receiving the first circular portion of the first spring for insertion of the bar.

4. The bicycle with two pedaling modes as claimed in claim 1, wherein
15 the rotating shaft tube further includes two hollow caps with an external thread respectively engaging with two ends of the rotating shaft tube, two ball bearings respectively enclosing the first tail portion and the second tail portion, and two fixing rings with an internal thread respectively engaging with the two caps.

20 5. The bicycle with two pedaling modes as claimed in claim 1, wherein the mode change apparatus further includes a cable connecting the controller to the bar, a clip clamping the cable against the bicycle and an elastic element

enclosing the cable and elastically abutting against the clip and the bar.

6. The bicycle with two pedaling modes as claimed in claim 1, wherein the second tail portion has a plurality of second flutes axially formed thereon, the first sleeve has a plurality of first flutes axially formed thereon, each of the two cranks has a jig disposed on a side thereof, and each of the two jigs has a plurality of mating teeth formed on an inside thereof for respectively engaging with the second flutes of the second tail portion and the first flutes of the first sleeve.

7. The bicycle with two pedaling modes as claimed in claim 6, wherein a jig with a C-shape further has two corresponding screw holes respectively formed thereon and a bolt screwing through the two corresponding screw holes so that the jig is tightened or loosened by the bolt.

8. The bicycle with two pedaling modes as claimed in claim 1, wherein a mating wedge-shaped portion of the first sleeve is of a hollow shape.